

CHAPTER 10

Uterine Synechiae

Uterine synechiae are intrauterine adhesions. They may involve small focal areas of the endometrium (Figures 10.1a–e), or they can be so extensive that they obliterate the entire endometrial cavity (Figures 10.2a–h).

Synechiae have important implications in menstrual issues, infertility, and pregnancy loss. Appropriately addressing these intrauterine adhesions can greatly alter the outcome for many of these reproductive variables. Operative hysteroscopy is the ideal way to surgically intervene in synechiae. Hysteroscopy is a minimally invasive procedure and has the intrinsic benefit of close and direct magnification for diagnostic and therapeutic purposes.

Intrauterine adhesions are commonly caused by intrauterine infection, a history of pregnancy evacuations with intraoperative or postoperative complications, or any type of intrauterine surgery. The major cause of intrauterine adhesions is damage to the basilar endometrium secondary to postpartum curettage or termination of pregnancy.¹ Other etiologies of synechiae include genital tuberculosis, pelvic radiation, endometrial surgery such as prior endometrial ablation or submucosal myoma resection, hysteroscopic as well as open myomectomy.² Predisposing factors include hypogonadism and endometritis. Hence, synechiae occur more commonly in the postabortal, post-termination, and postpartum setting, especially in those cases where vigorous curettage has disrupted the basilar layer, where endometritis has set in, and where hypogonadism is present. The more procedures the uterus undergoes, the more likely the chance of intrauterine adhesions. Endometrial ablation is a commonly utilized, minimally invasive technique for the control of menorrhagia. In many patients who undergo endometrial ablation, significant synechiae may form, which can preclude further evaluation of the endometrium in the case of future dysfunctional uterine bleeding. Figures 10.3a–d shows a uterine cavity that was ablated years before; the patient subsequently presented with dysfunctional bleeding. The uterine cavity was visualized, with significant synechiae noted.

Uterine synechiae can present with the symptom of primary or secondary infertility due to interference with embryo implantation. They can also cause recurrent early pregnancy loss. Asherman's syndrome involves intrauterine synechiae that occur as a result of vigorous curettage of the pregnant uterus. Severe Asherman's syndrome can cause amenorrhea or other menstrual irregularities. The differential diagnosis in such cases would also include congenital uterine anomalies. A diagnosis can be established by

ultrasound, sonohysterogram, hysterosalpingogram, or direct visualization with a hysteroscope.

While dilation and curettage can be used to treat uterine synechiae, the preferred mode of resection is under direct hysteroscopic visualization (Figures 10.4a–e). The following table serves to classify intrauterine adhesions based on hysteroscopic findings.³

Severe—More than three-quarters of the uterine cavity is involved. Agglutination of the wall or thick band occurs; ostial areas and upper cavity are occluded (Figures 10.5a–c).

Moderate—One-quarter to three-quarters of the uterine cavity is involved. No agglutination of the walls occurs (adhesions only); ostial areas and upper fundus are only partially occluded (Figures 10.6a–d).

Minimal—Less than one-quarter of the uterine cavity is involved. Thin or filmy adhesions occur; ostial areas and upper fundus are minimally involved or clear (Figures 10.7a–10.8d).

In cases of cervical stenosis accompanying suspected synechiae, ultrasound-guided dilation should be considered to avoid perforation or the creation of a false passage. Once it enters the uterine cavity, the diagnostic hysteroscope itself can be used to divide thin, filmy adhesions under direct hysteroscopic visualization. If the synechiae are found to be thick, scissors and/or energy-based resection should be performed to clear the uterine cavity with an operative hysteroscope (Figure 10.4a–e). It is prudent to begin resection of synechiae from where you can see proximally in the cavity and to work your way up to the fundus. Resection should always be done under direct hysteroscopic visualization with the goal being to restore normal anatomy to the uterine cavity. In cases of severe synechiae, architectural distortion is common, and risk of uterine perforation during hysteroscopic adhesion resection is higher. In these cases, concomitant laparoscopy may be prudent.

The potential for recurrence must be addressed at the time of any corrective procedure. Mechanical intrauterine devices such as a pediatric Foley catheter can be used for 1 week postoperatively to prevent adhesion reformation. Estrogen therapy should be administered in order to quickly build up the endometrial lining alone or in conjunction with a mechanical method. Follow-up hysterosalpingogram or hysteroscopy may be advocated to rule out recurrence of synechiae. Hysteroscopy has the benefit of being able to diagnose recurrent adhesions as well as to treat them by repeat hysteroscopic adhesiolysis.

Intrauterine adhesions or synechiae occur after damage to the basal layer of the endometrium, most often in post-pregnancy situations. They can also occur after other operative procedures involving the uterus, and they can impact menses, fertility, and pregnancy outcome. Hysteroscopy

is a minimally invasive modality that can concurrently diagnose and treat synechiae and improve the anatomic abnormalities and the associated reproductive outcomes in these patients.

REFERENCES

- ¹Schenker JG, Margalioth EJ. Intrauterine adhesions: An updated appraisal. *Fertil Steril*. 1982;37(5):593–610.
- ²Fedele L, Bianchi S, Frontino G. Septums and synechiae: Approaches to surgical correction. *Clin Obstet Gynecol*. 2006;49(4):767–788.
- ³March CM, Israel, R, March AD. Hysteroscopic management of intrauterine adhesions. *Am J Obstet Gynecol*. 1978;130:653.



FIGURE 10.1a: Focal synechiae.

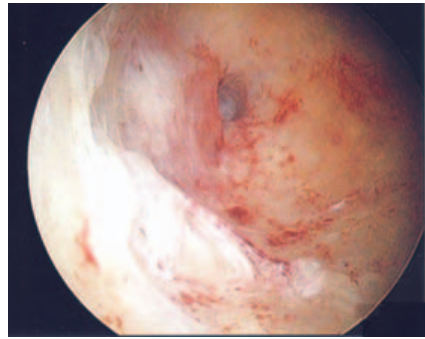


FIGURE 10.1b: Focal synechiae.

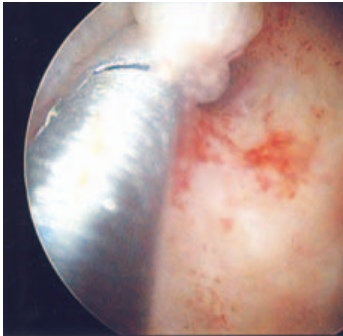


FIGURE 10.1c: Synechiae grasped.

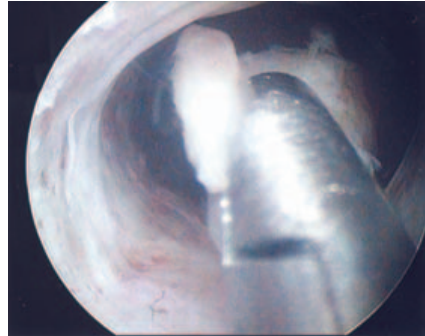


FIGURE 10.1d: Synechiae removed.

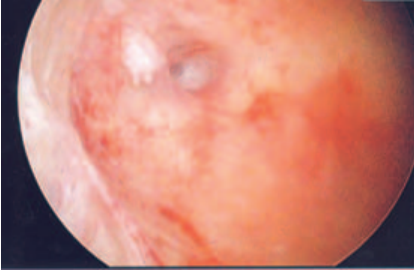


FIGURE 10.1e: Synechiae gone.

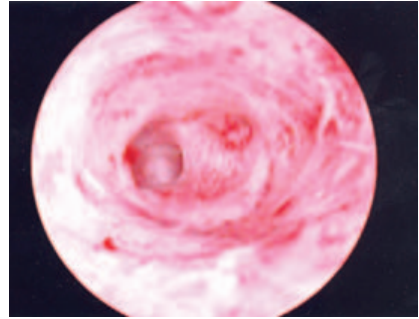


FIGURE 10.2a: Extensive synechiae obliterating the majority of the endometrial cavity.

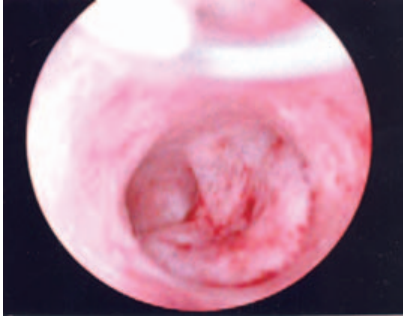


FIGURE 10.2b: Extensive synechiae obliterating the majority of the endometrial cavity.

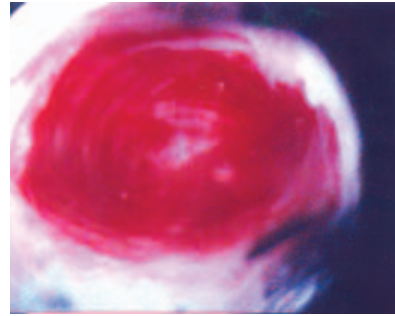


FIGURE 10.2c: Extensive synechiae.

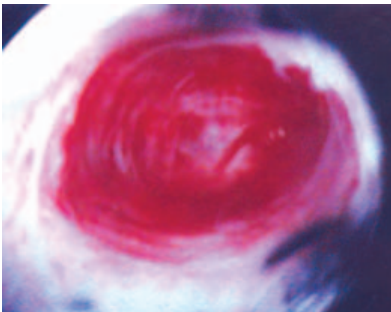


FIGURE 10.2d: Extensive synechiae.

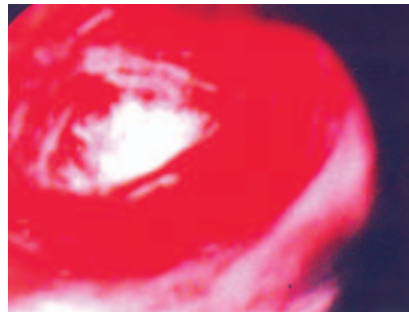


FIGURE 10.2e: Extensive synechiae.

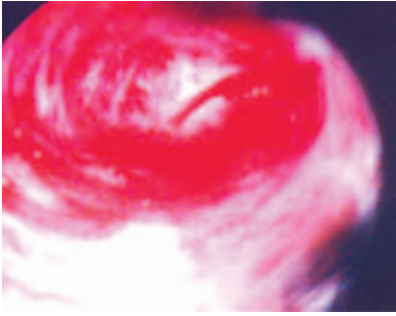


FIGURE 10.2f: Extensive synechiae.

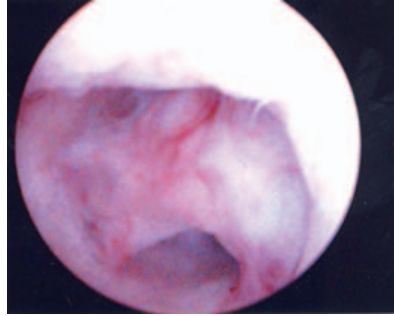


FIGURE 10.2g: Extensive synechiae.

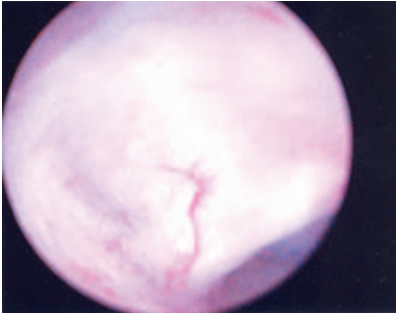


FIGURE 10.2h: Extensive synechiae.

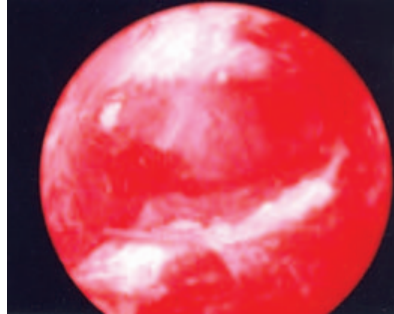


FIGURE 10.3a: latrogenic synechiae noted 1 year after global endometrial ablation.

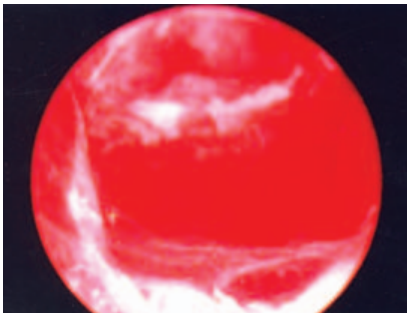


FIGURE 10.3b: latrogenic synechiae noted 1 year after global endometrial ablation.

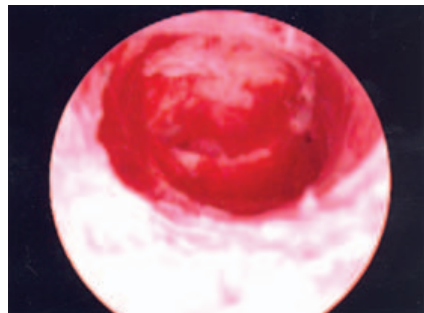


FIGURE 10.3c: latrogenic synechiae noted 1 year after global endometrial ablation.

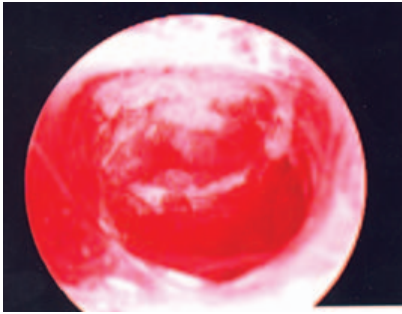


FIGURE 10.3d: Latrogenic synechiae noted 1 year after global endometrial ablation.

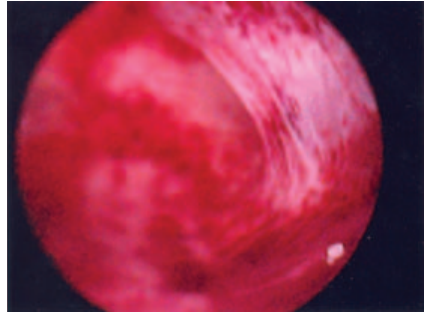


FIGURE 10.4a: Resection of synechiae—large band at synechiae on left lateral wall of uterus.

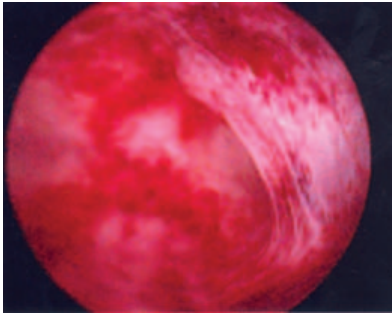


FIGURE 10.4b: Large band at synechiae on left lateral wall of uterus.

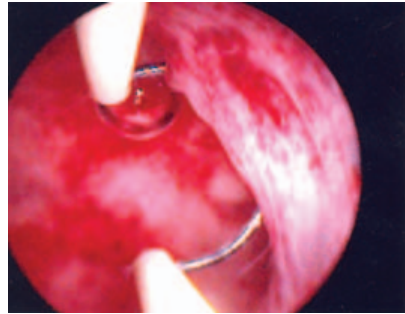


FIGURE 10.4c: Resection loop behind synechiae.

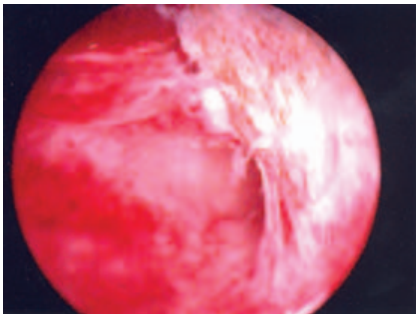


FIGURE 10.4d: Mid resection of synechiae.

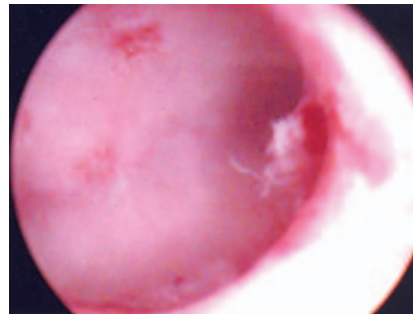


FIGURE 10.4e: Resection complete.

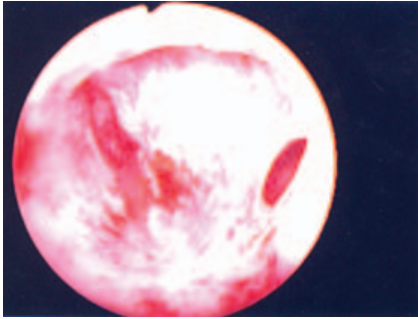


FIGURE 10.5a: Severe synechiae.

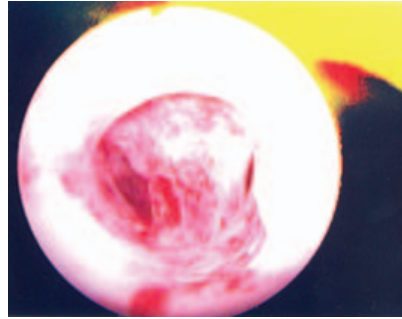


FIGURE 10.5b: Severe synechiae.

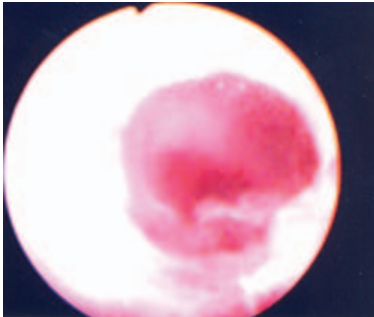


FIGURE 10.5c: Uterus after removal of synechiae with grasper.

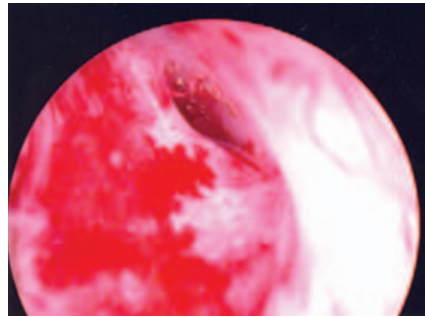


FIGURE 10.6a: Moderate synechiae before resection.

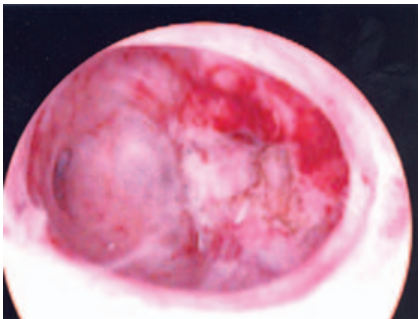


FIGURE 10.6b: Moderate synechiae after resection.

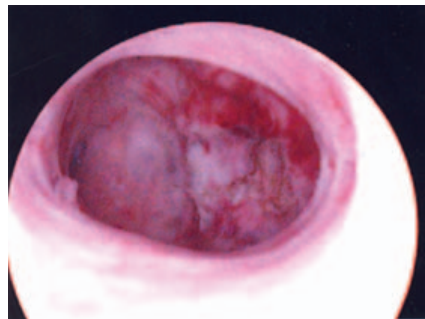


FIGURE 10.6c: Moderate synechiae after resection.

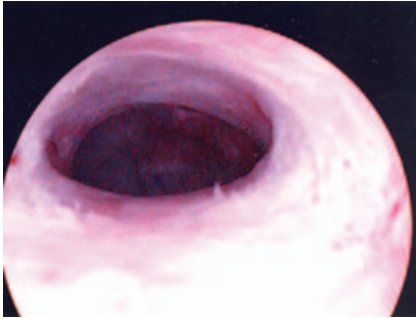


FIGURE 10.6d: Moderate synechiae after resection.

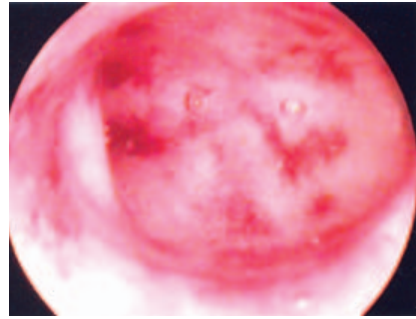


FIGURE 10.7a: Minimal synechiae.

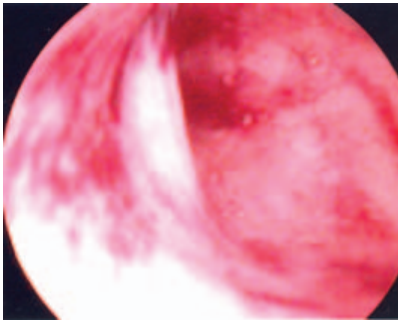


FIGURE 10.7b: Minimal synechiae.

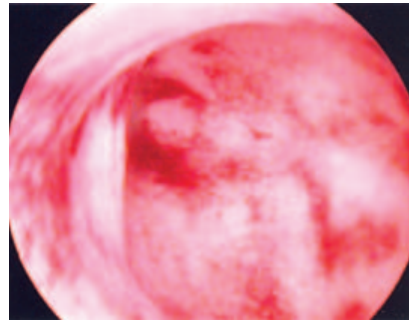


FIGURE 10.7c: Minimal synechiae.

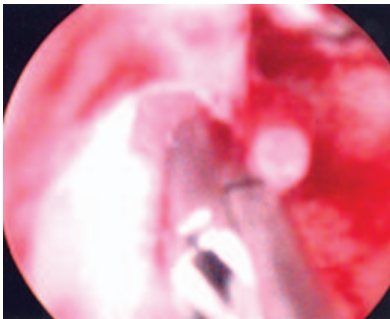


FIGURE 10.7d: Synechiae grasped.

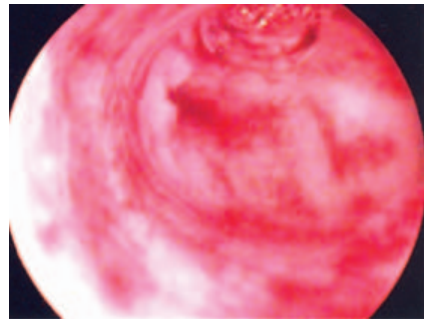


FIGURE 10.7e: Synechiae removed.

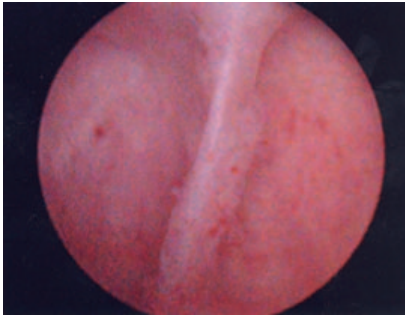


FIGURE 10.8a: One single synechia.

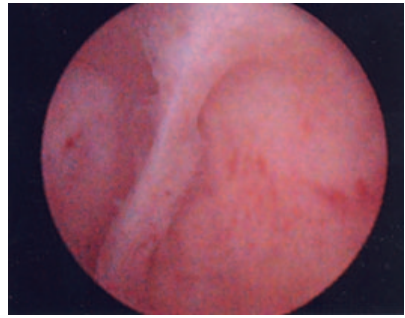


FIGURE 10.8b: One single synechia.

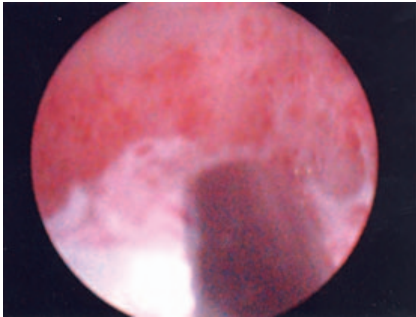


FIGURE 10.8c: Synechia grasped and removed.

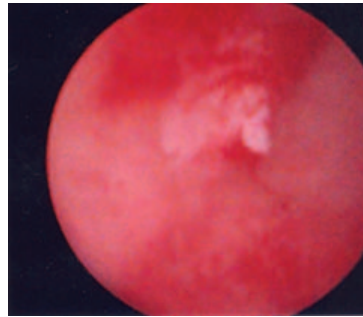


FIGURE 10.8d: Synechia gone.

